

**METHOD OF CONTROLLING GRAIN SIZE IN A POLYSILICON LAYER AND
IN SEMICONDUCTOR DEVICES HAVING POLYSILICON STRUCTURES**

ABSTRACT

A method of modulating grain size in a polysilicon
layer and devices fabricated with the method. The method
comprises forming the layer of polysilicon on a substrate;
and performing an ion implantation of a polysilicon grain
size modulating species into the polysilicon layer such that
an average resultant grain size of the implanted polysilicon
layer after performing a pre-determined anneal is higher or
lower than an average resultant grain size than would be
obtained after performing the same pre-determined anneal on
the polysilicon layer without a polysilicon grain size
modulating species ion implant.